

WHAT IS CLAIMED IS:

1. A display element, comprising:
 - an emission layer having a light-emitting layer that emits light by a voltage applied between electrodes;
 - a transmission layer that transmits the light emitted from the light-emitting layer; and
 - a total reflection surface in the transmission layer, that is capable of totally reflecting at least a part of the light radiated from the light-emitting layer in a direction of emission of the light-emitting layer.
2. The display element according to Claim 1, the transmission layer including a transparent member, the side of the transparent member facing the emission layer having recesses, at least one lateral side of each recess acting as the total reflection surface.
3. The display element according to Claim 2, the interior of the recess being filled with gas or substantially evacuated.
4. The display element according to Claim 2, comprising a substrate having the emission layer on the surface thereof,
 - the transparent member being joined to the substrate in a position that a protrusion between the recesses of the transparent member substantially correspond to the light-emitting layer so as to be in optically close contact with the light-emitting layer.
5. The display element according to Claim 2, further comprising:
 - a substrate having the emission layer on the surface thereof; and
 - a bonding layer that is formed between the transparent member and the emission layer so that a protrusion between the recesses of the transparent member is in optically close contact with the light-emitting layer.
6. The display element according to Claim 5, the thickness of the bonding layer being smaller than a depth of the recesses.
7. The display element according to Claim 2, comprising a plurality of the light-emitting layers, protrusions between the recesses being arranged at a same pitch as that of the light-emitting layers.
8. The display element according to Claim 1, the inclination angle of the total reflection surface being approximately from 40 degrees to 80 degrees.
9. The display element according to Claim 1, the inclination angle of the total reflection surface being approximately 70 degrees.

10. The display element according to Claim 1, further comprising a circularly polarizing plate that is disposed on the transmission layer adjacent to an emerging surface.

11. The display element according to Claim 1, the light-emitting layer being an organic-electro-luminescence light-emitting layer.

12. A display panel, comprising:
an emission layer having a plurality of light-emitting layers that emits light by a voltage applied between electrodes;
a transmission layer that transmits light emitted from the light-emitting layers;
and

a plurality of total reflection surfaces in the transmission layer, that is capable of totally reflecting at least a part of the light radiated from the light-emitting layers in a direction of emission of the light-emitting layers.

13. The display panel according to Claim 12, comprising a transmission panel acting as a transmission layer, a side of the transparent panel facing the emission layer having a plurality of recesses, at least one lateral side of which acting as total reflection surfaces.

14. The display panel according to Claim 13, protrusions between the recesses being arranged at a same pitch as that of the light-emitting layers.

15. A display apparatus, comprising the display panel according to Claim 12 and a drive unit that drives the light-emitting layers of the display panel to display an image.

16. A method for producing a display panel, comprising:
forming an emission layer on a surface of a substrate, the emission layer including a plurality of light-emitting layers that generate light by a voltage applied between electrodes;
forming a transparent panel at a same time or around thereto, the transparent panel acting as a transmission layer that transmits the light emitted from the light-emitting layers and having a plurality of recesses forming a plurality of total reflection surfaces capable of totally reflecting at least a part of the light radiated from the light-emitting layers in the direction of emission of the light-emitting layers; and

joining the transparent panel and the substrate together in the position that protrusions between the recesses of the transparent panel substantially corresponds to the light-emitting layers so as to be in optically close contact with the light-emitting layers.

17. The method for producing a display panel, according to Claim 16, further comprising applying an adhesive only to the protrusions of the transparent panel before joining the transparent panel and substrate together.

18. The method for producing a display panel, according to Claim 17, in the step of applying the adhesive, the transparent panel being pressed against the surface of a transfer table fully coated with the adhesive.